

NOVEMBER/DECEMBER 2025

**CEL42/FEL52 —ELECTRONIC
COMMUNICATION SYSTEMS**

Time : Three hours

Maximum : 75 marks

SECTION A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define Modulation.
2. Differentiate between DSB-SC and SSB modulation.
3. Define frequency modulation.
4. Mention any two differences between FM and AM.
5. Define pulse amplitude modulation (PAM).
6. State sampling theorem.
7. Define FDM and TDM.
8. Write two advantages of digital communication system.



9. Define antenna efficiency.
10. What is beamwidth in antenna radiation pattern?

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Derive the equation for an amplitude-modulated wave.

Or

- (b) Explain the block diagram of an AM radio transmitter.

12. (a) Derive the equation of an FM wave.

Or

- (b) Explain the working of a Foster-Seeley discriminator.

13. (a) Differentiate between PWM and PPM.

Or

- (b) Write short note on delta modulation.

14. (a) Explain the principle and working of "RADAR".

Or

- (b) Explain the working principle of satellite communication system.

15. (a) Write short note on directive gain and directivity.

Or

- (b) Explain the radiation pattern of a dipole antenna.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Discuss the types of modulation with neat waveform.

17. Explain in detail the working of FM detector with diagram.

18. Discuss in detail PCM system with block diagram.

19. Derive different digital modulation techniques with waveform.

20. Discuss different types of antenna with neat diagram.

